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EXAMINER	
GOLDBERG, BRIAN J	

ART UNIT	PAPER NUMBER
2861	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,218	SILVERBROOK ET AL.	
	Examiner	Art Unit	
	Brian Goldberg	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39,41 and 43-77* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39,41 and 43-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 10-15, 19, 20, 23-26, 28, 31-33, 35, 36, 40-44, and 50-77 are rejected under 35 U.S.C. 102(b) as being anticipated by Silverbrook et al. (US 6439908).

3. Regarding claim 1, Silverbrook et al. disclose "at least one printhead module (10 of Fig 2) comprising a unitary arrangement of a support member (28 of Fig 7), at least two printhead integrated circuits (18 of Fig 4), each of which has nozzles formed therein for delivering printing fluid onto the surface of print media (col 3 ln 45-47), at least two fluid distribution members (26, 30 of Fig 7) each mounting the at least two printhead integrated circuits to the support member, and an electrical connector (54 of Fig 4) for connecting electrical signals to the microprocessing circuitry of the at least two printhead integrated circuits (col 3 ln 59-65); a casing (14 of Fig 2) in which the at least one printhead module is removably mounted; and at least one controller (col 3 ln 48-50) provided on at least one printed circuit board supported by the casing, and connected to at least one of the printhead integrated circuits via connection of at least one connection port of the printed circuit board and the electrical connector, the controller being configured to process print data so as to control the printing operation of said at least

one of the printhead integrated circuits to print the processed print data (col 3 ln 59-65, 48 of Fig 8, see Fig 8), wherein the support member has at least one longitudinally extending channel (80 of Fig 7) for carrying the printing fluid for the printhead integrated circuits and includes a plurality of apertures (42 of Fig 7) extending through a wall of the support member arranged so as to direct the printing fluid from the at least one channel to associated nozzles in both, or if more than two, all of the printhead integrated circuits by way of respective ones of the fluid distribution members (see Fig 7 and col 3 ln 45-47)." See "Response to Arguments" below for further clarification.

4. Regarding claim 2, Silverbrook et al. disclose "a single said printhead module (10 of Fig 2) having a plurality of printhead integrated circuits (18 of Fig 4) and a length predetermined to provide for selected pagewidth (col 1 ln 6) printing (col 7 ln 31-37)."

5. Regarding claim 3, Silverbrook et al. disclose "the printhead module has sixteen printhead integrated circuits (col 7 ln 31-37)." Silverbrook et al. state that the printhead can be any length, which includes a length having sixteen printhead integrated circuits.

6. Regarding claim 4, Silverbrook et al. disclose "at least two said printhead modules (10 of Fig 2) mounted in a linearly aligned relationship (see Fig 15), the assembly having an aggregate length and a number of printhead integrated circuits (18 of Fig 4) predetermined to provide for selected pagewidth printing (col 7 ln 31-37)."

7. Regarding claim 5, Silverbrook et al. disclose "each of the printhead modules has sixteen integrated circuits (col 7 ln 31-37)." Silverbrook et al. state that the printhead can be any length, which includes a length having sixteen printhead integrated circuits.

8. Regarding claim 6, Silverbrook et al. disclose "each printhead module of the at least two printhead modules has end portions which permit interconnection of the linearly aligned printhead modules (see Fig 15) and provide for fluid connection (16 of Fig 2) of the channels thereof (see Fig 2)."

9. Regarding claim 10, Silverbrook et al. disclose "the at least one printhead module is mounted to the casing (14 of Fig 3) in a manner to constrain movement of the printhead module relative to the casing in at least the direction of printing fluid delivery from the nozzles to the print media (see Fig 2)." The clamping arrangement shown in figure 2 holds the module firmly in place, constraining movement in all directions.

10. Regarding claim 11, Silverbrook et al. disclose "the support member (28 of Fig 2) is formed such that a first side thereof is slidably received in a longitudinally extending groove (64 of Fig 2) of the casing and a second side thereof is clamped to the casing by a clamping arrangement (94 and edge of 14 of Fig 2)."

11. Regarding claim 12, Silverbrook et al. disclose "the clamping arrangement (94 and edge of 14 of Fig 2) is employed to constrain movement of the printhead module relative to the casing in the direction of printing fluid delivery from the nozzle to the print media (see Fig 2)." The clamping arrangement shown in figure 2 holds the module firmly in place, constraining movement in all directions.

12. Regarding claim 13, Silverbrook et al. disclose "the casing comprises a longitudinally extending channel portion within which the at least one printhead module is mounted, the channel comprising first and second side walls joined by a lower wall (channel formed by side walls 64 and 94 of Fig 2 and joined by lower wall marked 14 in

Fig 1); the first side wall including the longitudinally extending groove (groove formed by 64 in Fig 2) and the longitudinally extending groove being formed between upper and lower longitudinally extending tabs (see upper and lower tabs of 64 of Fig 2); and the second side wall having a longitudinally extending upper surface (bottom of 94 of Fig 2) upon which the second side of the at least one printhead module is mounted, the longitudinally extending upper surface having a height from the lower surface of the channel portion substantially equal to a height of the lower longitudinally extending protrusion of the first side wall (height of 94 is substantially equal to the height of 64 in Fig 2)."

13. Regarding claim 14, Silverbrook et al. disclose "the casing includes a support frame (64, 94, lower parts of 76 and 32 of Fig 2), incorporating the channel portion and a cover portion (28 of Fig 6); and the clamping arrangement engages with the support frame (see Fig 2, clamping arrangement is part of support frame and thus engages with support frame).

14. Regarding claim 15, Silverbrook et al. disclose "a capping member (floor 34, col 2 ln 41-44) arranged to cap a terminal end of the support member (28 of Fig 11) of the at least one printhead module."

15. Regarding claim 19, Silverbrook et al. disclose "at least one fluid connector (78 of Fig 12) to connect at least one printing fluid delivery hose from a print fluid supply (col 7 ln 5-7) to the at least one channel at least one longitudinal end (see Fig 12) of the at least one printhead module."

16. Regarding claim 20, Silverbrook et al. disclose "the support member has complementary female (38 of Fig 11) and male (42 of Fig 5) end portions; and the at least one fluid connector (78 of Fig 12) is arranged to interconnect with either the female or male end portion (in this case with the male)."

17. Regarding claim 23, Silverbrook et al. disclose "the at least one fluid connector (78 of Fig 12) has at least one tubular portion for connecting with the at least one fluid delivery hose (col 7 ln 5-7) and the at least one tubular portion is arranged to be in fluid connection with the at least one channel (80 of Fig 7) of the printhead module (col 5 ln 7-9)."

18. Regarding claim 24, Silverbrook et al. disclose "the at least one tubular portion is arranged so as to form a linear fluid connection with the at least one first channel (col 5 ln 7-9, 78 of Fig 6 and 80 of Fig 7)."

19. Regarding claim 25, Silverbrook et al. disclose "two fluid connectors are provided, one connected at each longitudinal end of the at least one printhead module, for providing fluid supply from both ends of the at least one channel (see Fig 15, col 8 ln 3-5)."

20. Regarding claim 26, Silverbrook et al. disclose "the support member (28 of Fig 6) is formed with a plurality of the channels (80 of Fig 7), each of which is arranged to carry a different printing fluid for direction to associated groups of the nozzles in the both, or if more than two, all of the printhead integrated circuits (18 of Fig 4) by way of respective ones of the fluid distribution members (col 2 ln 17-19, ln 59-67)."

21. Regarding claim 28, Silverbrook et al. disclose "each of the printhead integrated circuits (18 of Fig 4) is individually supported upon a separate said fluid distribution member (col 2 ln 17-19)."

22. Regarding claim 31, Silverbrook et al. disclose "a lower surface of the at least one fluid distribution member (26 of Fig 7) is attached to the upper surface of the support member (28 of Fig 6) by an adhesive material (col 6 ln 14-29)."

23. Regarding claim 32, Silverbrook et al. disclose "the adhesive material is deposited to surround each of the apertures (40 of Fig 10) of the support member (28 of Fig 6) and each of corresponding apertures formed in the lower surface of the at least one fluid distribution member (26 of Fig 7) so as to form a seal between the respective apertures (Fig 8, 10, 11, col 6 ln 14-40)."

24. Regarding claim 33, Silverbrook et al. disclose "the apertures of the support member are formed in a row extending across the support member with respect to the longitudinally extending direction of the support member (see Fig 8), and two deposits of adhesive material are deposited on either side of the row of apertures to provide stability for the mounting arrangement (col 6 ln 16-20)."

25. Regarding claim 35, Silverbrook et al. disclose "the casing (14 of Fig 3) includes a support frame (64, 94, lower parts of 76 and 32 of Fig 2) for supporting the at least one printhead module and a cover portion (28 of Fig 6) which is removably attached to the support frame (col 2 ln 51-53)."

26. Regarding claim 36, Silverbrook et al. disclose "drive electronics (54 of Fig 7) are provided for driving the at least two printhead integrated circuits of the at least one

printhead module via the electrical connector (48 of Fig 8); and wherein the support frame (64 of Fig 2) supports the drive electronics (see Fig 2)."

27. Regarding claim 41, Silverbrook et al. disclose "the drive electronics (col 3 ln 48-50) is provided on at least one printed circuit board (18 of Fig 4) which is supported by a support frame (64, 94, lower parts of 76 and 32 of Fig 2) of the casing (14 of Fig 3)."

28. Regarding claim 43, Silverbrook et al. disclose "the at least one connection port is aligned with the electrical connector (see Fig 8)."

29. Regarding claim 44, Silverbrook et al. disclose "each printhead integrated circuit (18 of Fig 4) is connected with an individual said electrical connector (48 of Fig 8)."

30. Regarding claim 50, Silverbrook et al. disclose "the at least one printed circuit board (54 of Fig 7) for the at least one controller is supported on the support frame (64, 94, lower parts of 76 and 32 of Fig 2) of the casing (14 of Fig 3) via at least one mounting element (62 of Fig 7)."

31. Regarding claim 51, Silverbrook et al. disclose "the mounting element (62 of Fig 7) incorporated a clamping arrangement (64, 94 and curved edge of 14 of Fig 2) for clamping the at least one printhead module to the casing (14 of Fig 3)."

32. Regarding claim 52, Silverbrook et al. disclose "connection strips (102 and 106 of Fig 3) are provided at opposite edge regions of the printed circuit board (54 of Fig 3), the connection strips adjacent one end of the support frame being connectable to a data input (col 3 ln 59-64), and the connection strips adjacent the other end of the support frame being terminated in a manner to prevent data signal reflections (see Fig 3)."

33. Regarding claim 53, Silverbrook et al. disclose "a plurality of longitudinally extending electrical conductors (58 and 60 of Fig 14) are located within the casing and are provided for delivering power from a power supply to the drive electronics (col 3 ln 49, 62-64, col 5 ln 43-50)."

34. Regarding claim 54, Silverbrook et al. disclose "power from the plurality of electrical conductors (58 and 60 of Fig 14) is delivered to the drive electronics via the electrical connector (col 3 ln 59-64)."

35. Regarding claim 55, Silverbrook et al. disclose "power from the plurality of electrical conductors (58 and 60 of Fig 14) is also delivered to the at least two printhead integrated circuits via the electrical connector (col 3 ln 59-64)."

36. Regarding claim 56, Silverbrook et al. disclose "a loading plate is provided for loading conductor portions of the electrical connector against respective ones of the plurality of electrical conductors (col 4 ln 6-14)."

37. Regarding claim 57, Silverbrook et al. disclose "the loading plate includes a non-conductive portion which urges the electrical connector against the plurality of electrical conductors (col 4 ln 24-28)."

38. Regarding claim 58, Silverbrook et al. disclose "the non-conductive portion is formed of a resilient material (col 4 ln 24-28)."

39. Regarding claim 59, Silverbrook et al. disclose "the plurality of electrical conductors (58 and 60 of Fig 14) is arranged to be connected to the power supply at one end of the printhead assembly (see Fig 3, col 5 ln 43-45, col 3 ln 57-65)."

40. Regarding claim 60, Silverbrook et al. disclose "the plurality of electrical conductors (58 and 60 of Fig 3) is arranged as two groups of electrical conductors respectively connected to the power supply at respective ends of the printhead assembly, respective ones of electrical conductors of the two groups of electrical conductors being connected together at abutting regions intermediate the ends of the printhead assembly (see Fig 3, col 5 ln 43-46, col 3 ln 57-65)."

41. Regarding claim 61, Silverbrook et al. disclose "the abutting regions of the individual electrical conductors (58 and 60 of Fig 3) are arranged in overlapping relationship (see Fig 3 and col 5 ln 45-46)."

42. Regarding claim 62, Silverbrook et al. disclose "the plurality of electrical conductors (58 and 60 of Fig 3) is carried by a mounting element (62 of Fig 2) which is mounted to a support frame (64, 94, lower parts of 76 and 32 of Fig 2) of the casing (14 of Fig 2)."

43. Regarding claim 63, Silverbrook et al. disclose "the mounting element has formed therein a plurality of recessed channels for receiving individual ones of the plurality of electrical conductors (58 and 60 of Fig 3, see Fig 3)."

44. Regarding claim 64, Silverbrook et al. disclose "the casing (14 of Fig 2) comprises a support frame (64, 94, lower parts of 76 and 32 of Fig 2) and at least one mounting element (28 of Fig 2) mounted to the support frame for supporting a printed circuit board (54 of Fig 7) having drive electronics, incorporating a controller for controlling the at least two printhead integrated circuits (col 3 ln 48-50, ln 59-65),

connected to the at least two printhead integrated circuits (18 of Fig 4) via the electrical connector (48 of Fig 8)."

45. Regarding claim 65, Silverbrook et al. disclose "there are at least two of the mounting elements (28 of Fig 2) arranged in abutting relationship along a longitudinal direction of the casing (14 of Fig 2), each being arranged to support an individual printed circuit board (22 of Fig 8), and the individual printed circuit boards supports by abutting ones of the mounting elements being interconnected by an electrical connecting member (98 of Fig 14) located between the abutting mounting elements (see Fig 3)."

46. Regarding claim 66, Silverbrook et al. disclose "each of the mounting elements comprises side regions (46 of Fig 5) having raised and recessed portions arranged so that the recessed portions of abutting mounting elements for a recess into which the electrical connecting member (56, 98 of Fig 14) is placed (col 2 ln 54-58)."

47. Regarding claim 67, Silverbrook et al. disclose "the electrical connecting member (98 of Fig 14) comprises non-conductive material (96 of Fig 14) which is clad with conductive strips (58 and 60 of Fig 14), the electrical connecting member being arranged so as to fit within the recess formed between abutting mounting elements (28 of Fig 2, see Fig 3)."

48. Regarding claim 68, Silverbrook et al. disclose "the conductive strips are positioned to overlay a series of spaced connection strips (102 and 106 of Fig 3) at the edge regions of each of the individual printed circuit boards (54 of Fig 3)."

49. Regarding claim 69, Silverbrook et al. disclose "there is twice as many conductive strips (58 and 60 of Fig 14) of the electrical connecting member (98 of Fig 14) as there are connection strips of the printed circuit boards (28), whereby each connection strip of the printed circuit board will engage with at least one of the two adjacent conductive strips (see Fig 3)."

50. Regarding claim 70, Silverbrook et al. disclose "the casing (14 of Fig 3) includes a support frame (64, 94, lower parts of 76 and 32 of Fig 2) for supporting the at least one printhead module (10 of Fig 2) and a cover portion (28 of Fig 6) which is removably attached to the support frame, the support frame mounting at least one mounting element, the mounting element mounting drive electronics (col 3 ln 48-50) for driving the at least two printhead integrated circuits of the at least one printhead module via the electrical connectors (48 of Fig 8), and a plurality of longitudinally extending electrical conductors (58 and 60 of Fig 14) for delivering power from a power supply to the drive electronics and the at least two printhead integrated circuits (col 3 ln 59-64, col 5 ln 43-50); and the mounting element incorporates a clamping arrangement (64, 94 and curved edge of 14 of Fig 2) for clamping the at least one printhead module to the support frame."

51. Regarding claim 71, Silverbrook et al. disclose " the support member includes longitudinally extending tabs (44 of Fig 11) on two parallel sides thereof, the casing (14 of Fig 2) comprises a support frame (64, 94, lower parts of 76 and 32 of Fig 2) for supporting the support member, the support frame having a first side wall (94 of Fig 2) having a longitudinally extending recessed groove (92 of Fig 5) and a second side wall

(64 of Fig 2) substantially parallel to the first side wall, and the longitudinally extending tab (44 of Fig 11) on one side of the support member being received in the longitudinally extending recessed groove (92 of Fig 5) of the support frame and the longitudinally extending tab on the other side of the support member being received on an upper surface of the second side wall of the support frame (see Fig 5)."

52. Regarding claim 72, Silverbrook et al. disclose "the support frame (64, 94, lower parts of 76 and 32 of Fig 2) mounts at least one mounting element for supporting drive electronics (col 3 ln 48-50) for driving the at least two printhead integrated circuits (18 of Fig 4) via the electrical connector (48 of Fig 8)."

53. Regarding claim 73, Silverbrook et al. disclose "the at least one mounting element comprises at least on extending arm portion (lower portion of 64 of Fig 2) arranged so as to clamp the longitudinally extending tab (44 of Fig 11) of the support member to the upper surface of the second side wall (64 of Fig 5) of the support frame."

54. Regarding claim 74, Silverbrook et al. disclose "the longitudinally extending tabs (44 of Fig 11) of the support member include a plurality of lugs (tips of 44 of Fig 11) arranged along the lengths thereof and spaced so as to correspond to the mounted positions of the at least two printhead integrated circuits (18 of Fig 8); and the at least one extending arm portion (lower portion of 64 of Fig 2) includes a recessed section (92 of Fig 5) arranged to engage with one of the plurality of lugs (tips of 44 of Fig 11) on the longitudinally extending tab (44 of Fig 11) clamped thereby."

55. Regarding claim 75, Silverbrook et al. disclose "the casing (14 of Fig 2) comprises a support frame which supports at least one first printed circuit board (18 of

Fig 8) carrying drive electronics for driving the at least two printhead integrated circuits via the electrical connector (col 3 ln 48-50); and the at least one first printed circuit board is engaged at one end of the support frame by a second printed circuit board (22 of Fig 8) which connects the drive electronics on the first printed circuit board to power and data supplies (col 3 ln 57-65) and is engaged at the other end of the support frame by a third printed circuit board (54 of Fig 3) which is arranged to spring load the first printed circuit board in the direction of the second printed circuit board (col 4 ln 24-38)."

56. Regarding claim 76, Silverbrook et al. disclose "the third printed circuit board (54 of Fig 3) comprises termination connections for terminating a data signal traversing the at least one first printed circuit board from the second printed circuit board (col 3 ln 6-18)."

57. Regarding claim 77, Silverbrook et al. disclose "the casing (14 of Fig 2) comprises a support frame for supporting a first printed circuit board (18 of Fig 8) carrying drive electronics (col 3 ln 49-50) for driving the at least two printhead integrated circuits via the electrical connector; and at least one second printed circuit board (22 of Fig 8) is mounted to at least one end of the support frame, the second printed circuit board comprising: a power terminal (48 of Fig 8, col 3 ln 59-64, col 2 ln 57-58) for connecting the electrical connector to a power supply via a plurality of longitudinally extending electrical conductors; a data terminal (48 of Fig 8, col 3 ln 59-64, col 2 ln 57-58) for connecting the drive electronics to a data input via the first printed circuit board; and a fluid delivery port (72 of Fig 8) for connecting the at least one channel of the support member to a fluid supply via fluid delivery tubes."

Claim Rejections - 35 USC § 103

58. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

59. Claims 7 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. in view of Milan (US 5658158).

60. Regarding claims 7 and 16, Silverbrook et al. disclose the claimed invention as set forth above with respect to claims 6 and 15, respectively. Thus Silverbrook et al. disclose the claimed invention except "the end portions ... comprise complementary female and male end portions" and "the capping member is arranged to cap each of the female and male end portions."

61. Milan teaches having "complementary female and male end portions" to connect a modular assembly and a capping member to cap the end portions (see Figs 1 and 3). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide female and male end portions and caps for the end portions. One would have been motivated to so modify Silverbrook et al. for the benefit of providing a module that more easily assembles and disassembles in a non-permanent manner while maintaining a sturdy and secure protected connection.

62. Claims 8, 9, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. in view of Spivey (US 6190002). Silverbrook et al. disclose the claimed invention as set forth above with respect to claims 6 and 19,

respectively. Thus Silverbrook et al. meet the claimed invention except "a sealing adhesive is provided" and "the sealing adhesive is an epoxy."

63. Spivey teaches providing a sealing adhesive (66 of Fig 4) and "the sealing adhesive is an epoxy (col 5 ln 3)." It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide an epoxy sealing adhesive. One would have been motivated to so modify Silverbrook et al. for the benefit of obtaining a more secure seal between the capping member and module.

64. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. in view of Milan as applied to claim 16 above, and further in view of Spivey (US 6190002). Silverbrook et al. in view of Milan disclose the claimed invention as set forth above with respect to claim 16. Thus Silverbrook et al. in view of Milan meet the claimed invention except "wherein a sealing adhesive is provided" and "the sealing adhesive is an epoxy."

65. Spivey teaches providing a sealing adhesive (66 of Fig 4) and "wherein the sealing adhesive is an epoxy (col 5 ln 3)." It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide an epoxy sealing adhesive. One would have been motivated to so modify Silverbrook et al. in view of Milan for the benefit of obtaining a more secure seal between the capping member and module.

66. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. in view of Silverbrook (WO 2001/089849).

67. Silverbrook et al. meets the claimed limitations as set forth above in claim 26, except "a support member is formed with a further channel (82) for delivering air to the at least two printhead integrated circuits for maintaining the nozzles of the at least two printhead integrated circuits substantially free from impurities."

68. Silverbrook teaches an ink distribution structure that supplies air to each print chip (27) via an air inlet port (61) thus preventing the build-up of any dust or unwanted contaminants at the apertures (44) in the nozzle guard (page 7, lines 5-9). It would have been obvious to one of ordinary skill in the art at the time of the invention to include a channel for delivering air to the printhead circuits. One would have been motivated to modify the invention for the benefit of improving the print quality as taught by Silverbrook.

69. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al in view of Patil et al. (US 6830646). Silverbrook et al. disclose the claimed invention as set forth above with respect to claim 33. Thus Silverbrook et al. meet the claimed invention except "the adhesive material is a curable resin."

70. Patil et al. disclose "the adhesive material is a curable resin (30 and 36 of Fig 3, col 11 ln 44-49, col 8 ln 47-49)." It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a curable resin as the adhesive material. One would have been motivated to so modify Silverbrook et al. for the benefit of creating the strong and durable attachment that curable resins provide.

71. Claims 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. in view of Lodal et al. (US 2003/0202034).

72. Silverbrook et al. disclose the claimed invention as set forth above with respect to claim 1. Thus Silverbrook et al. meet the claimed invention except a print media guide mounted to the casing, arranged to guide print media past the print surface formed by the at least one printhead module mounted to the casing, wherein the print media guide is arranged to substantially prevent the print media from impinging on the nozzles of each of the at least two printhead integrated circuits and the print media guide is arranged to provide a gap between the nozzles of each of the at least two printhead integrated circuits and the passing print media.

73. Lodal et al. teaches a print media guide (26) mounted to the casing, arranged to guide print media past the print surface formed by the at least one printhead module (20) mounted to the casing, wherein the print media guide is arranged to substantially prevent the print media from impinging on the nozzles of each of the at least two printhead integrated circuits and the print media is arranged to provide a gap between the nozzles of each of the at least two printhead integrated circuits and the passing print media (P24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Silverbrook et al. with that of Lodal et al. in order to improve image quality and consistency.

74. Claims 45-49 are rejected under 35 U.S.C. 103(a) as being obvious over Silverbrook et al. in view of Silverbrook (US 6916082).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome

by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

75. Silverbrook et al. disclose the claimed invention as set forth above with respect to claim 44. Thus Silverbrook et al. meet the claimed invention except the limitations set forth in claims 45-49.

76. Silverbrook teaches the at least one controller is arranged to control the printing operation of a selectable number of the at least two printhead integrated circuits via the electrical connector (Column 5, Lines 7 - 18) ... wherein the at least one printhead module comprises one or more groups of two printhead integrated circuits and a single controller is selected for controlling each group of two printhead integrated circuits via the electrical connector (Column 5, Lines 7 - 11) ... wherein the at least one printhead module comprises one or more groups of four printhead integrated circuits and a single controller is selected for controlling each group of four printhead integrated circuits via

the electrical connector (Column 5, Lines 7 - 11) ... wherein the at least one printhead module comprises one or more groups of eight printhead integrated circuits and a single controller is selected for controlling each group of eight printhead integrated circuits via the electrical connector (Column 5, Lines 7 - 11) ... the at least one printhead module comprises one or more groups of sixteen printhead integrated circuits and a single controller is selected for controlling each group of sixteen printhead integrated circuits via the electrical connector. It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the at least one printhead module comprises one or more groups of sixteen printhead integrated circuits and a single controller is selected for controlling each group of sixteen printhead integrated circuits via the electrical connector, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art, for the purpose of improving the quality of printing. *St. Regis Paper Co. B. Bemis Co., 93 USPQ 8.*

77. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of the at least one printhead module comprises one or more groups of sixteen printhead integrated circuits and a single controller is selected for controlling each group of sixteen printhead integrated circuits via the electrical connector as taught by Silverbrook. The motivation for doing so would have been to improve the quality of printing.

Response to Arguments

78. Applicant's arguments filed 8/14/06 have been fully considered but they are not persuasive. Regarding independent claim 1, the amendment of the electrical connector

being provided for connecting electrical signals to the microprocessing circuitry of the at least two printhead integrated circuits does not further clarify that the print data processed by the claimed controller is communicated to the microprocessing circuitry of the printhead integrated circuit(s) as claimed. The electrical connector is claimed as being used for connecting *electrical signals*, not *processed print data*. The Silverbrook reference, as cited above, provides for the electrical connector and controller as claimed, since electrical connector 54 provides a connection between all of the printhead integrated circuits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goldberg whose telephone number is 571-272-2728. The examiner can normally be reached on Monday through Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vip Patel can be reached on 571-272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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October 10, 2006

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